

ARTICULATING SUTURING DEVICE AND METHOD

ABSTRACT OF THE DISCLOSURE

Devices, systems, and methods for suturing of body lumens allow the
5 suturing of vascular puncture sites located at the distal end of a percutaneous tissue
tract. An elongated articulated foot near a distal end of a shaft is inserted through the
penetration and actuated so that the foot extends along the luminal axis. The foot
carries suturing attachment cuffs, and needles are advanced from the shaft through
the vessel wall outside of the penetration and into engagement with the needle cuffs
10 after the foot has been drawn proximally up against the endothelial surface of the
blood vessel. The cross-section of the shaft within the tissue tract can be minimized
by laterally deflecting the needles as they leave the shaft, while tapered depressions
within the foot can guide the advancing needles into engagement with the cuffs. The
cuffs lockingly engage the needles and can be withdrawn proximally along the
15 needle paths and through the tissue tract so as to form a loop of suture across the
puncture. The articulating foot may be realigned with the shaft and withdrawn
proximally through the tissue tract without dilating the tissue tract.